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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,700

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Detlev Wittmer

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EXAMINER

WU, JUNCHUN

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,700	<b>Applicant(s)</b> WITTMER ET AL.	
	<b>Examiner</b> JUNCHUN WU	<b>Art Unit</b> 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1-4 have been cancelled.
2. Claims 5-10 are pending in this application.
3. Claim 5 has been amended.

### ***Claim Objections***

4. Claim 8 is objected to because the claim is not a complete sentence. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over (“PROFIBUS technology and application – system description” Oct. 2002, hereinafter “PROFIBUS”), in view of Diedrich et al. (“Field Device Integration in DCS Engineering using a Device Model” hereinafter “Diedrich”) and further view of Pöschmann et al. (“Experience with formal methods implementing the PROFIBUS FMS and DP protocol for industrial applications” hereinafter “Pöschmann”)

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Per claim 5 (Currently amended)

PROFIBUS discloses

A method for producing software modules for field devices for process automation technology, that encapsulate all the data and functions of the corresponding field devices, wherein the software modules serve as device descriptions and have defined interfaces for application programs in process control systems (See PROFIBUS page 27 Section 7.3 under “***Device Description as Software Component***”) comprising the steps of:

But PROFIBUS does not explicitly disclose

- generating syntactically correct standard device descriptions, from PDM device descriptions, HCF device descriptions or company specific electronic device descriptions for field devices not having a uniform form, or language by means of a first compiler or generator; and converting the syntactically and semantically correct standard device descriptions further into corresponding software modules by means of a second compiler.

However, Diedrich discloses

- generating standard device descriptions, for field devices not having a uniform form, or language by means of a first compiler or generator (e.g. Diedrich discloses on page 167, last paragraph “*There are two steps within the device description technology. Firstly, the device description has to be generated. This is done by compilers or generators, which translate the ASCII device description.*”)
- converting standard device descriptions further into corresponding software modules by means of a second compiler (e.g. on page 168, 2<sup>nd</sup> paragraph “*The following tools have to*

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*be available (see Figure 7): an editor, a compiler, an interpreter for the handling of the device description, and PC Software with the components HMI interface and API mapping interface for the use of the Device Description by the operator. The editor is the front end to the device manufacturer who provides the machine readable device description. The compiler translates these DDs into the DCOM server format (i.e. software module).”)*

- Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify teaching of PROFIBUS with the teachings of Diedrich to include producing device descriptions by means of a compiler and converting device descriptions into software module by means of a compiler in order to provide a method for field device offers diagnosis, Maintenance and pre-processing functions. (see Diedrich’s abstract)

PROFIBUS discloses on page 25 Section 7. *“PROFIBUS has developed a number of methods and tools ("integration technologies") for this type of device description which enable standardization of device management.”* Those device descriptions may use well known device descriptions such as PDM (Process Device Manager) or HCF (HART® Communication Foundation).

But both PROFIBUS and Diedrich do not disclose

- generating syntactically correct standard device descriptions

However, Pöschmann discloses

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- Using the syntactic and semantic model of the specification in the PROFIBUS application (on page 277 “*Extensive measures in the securing of quality are necessary to guarantee conformity, interoperability, and in future exchangeability of equipment as well. These imply the use of Formal Description Technique (FDT) as used in the field of telecommunications or local area networks also in manufacturing and process automation. One advantage is that critical parts of the communication protocol can be verified during the phase of specification. Syntactic and semantic errors within the specification can be noticed early.*” Pöschmann further discloses using VEDA tool to verify the specification. On page 282 “*What problems of the specification can be detected by using VEDA. The first thing is the syntactic correctness of the specification using the compiler. Most problems can be solved related to the interface between modules or layers according to the ISO OSI reference model.*”)
- Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine teaching of PROFIBUS which may include PDM device descriptions or HCF device descriptions with the teachings of Diedrich and include using syntactic and semantic model within the specification and tool to verify and correct syntactically by Pöschmann’s teaching in order to achieve top-quality products, easy to maintain, and a good structure. (see Pöschmann on page 277)

Per claim 6

The rejection of claim 5 is incorporated and PROFIBUS further discloses

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- interfaces and the software modules meet the FDT/DTM specifications  
(PROFI BUS Guideline -Order No. 2.162 "Specification for Profibus Device Descriptions and Device Integration", Volume 3) (See PROFIBUS page 27 Section 7.3  
*“The FDT Interface” & “DTM (device type manager) is integrated in the engineering tool or control system over the FDT interface.”*).

Per claim 7

The rejection of claim 5 is incorporated and PROFIBUS discloses on page 25 Section 7.

*“PROFIBUS has developed a number of methods and tools ("integration technologies") for this type of device description which enable standardization of device management.”*

PDM device descriptions, HCF device descriptions or company-specific device descriptions (In the ordinary skill of art, PDM (Process Device Manager) is an universal tool for configuration, parameter assignment, commissioning, diagnostics and maintenance of intelligent field devices and automation components and also HCF (HART® Communication Foundation) standard device description is a comprehensive set of software tool for development, testing and maintenance of HART device descriptions. Those tools are well known for device descriptions and it is obvious that may use in PROFIBUS. (see reference “Simatic PDM”)

Per claim 8

The rejection of claim 5 is incorporated and PROFIBUS further discloses

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device description is an EDD 1.1 device description (PROFIBUS Guideline -Order No. 2.162 "Specification for Profibus Device Descriptions and Device Integration", Volume 2) (See PROFIBUS page 27 Section 7.2 "*The specification of the EDDL is an integral component of the international standard IEC 61804.*").

Diedrich discloses

syntactically and semantically correct (e.g. on page 165, 1st paragraph "*The device description has to be based on a device model, because of the semantic behind the lexical and syntactical elements.*")

Per claim 9

The rejection of claim 8 is incorporated and PROFIBUS further discloses

- comprising the step of: producing the EDD 1.1 device descriptions PDM device descriptions (In the ordinary skill of art, PDM (Process Device Manager) is an universal tool for configuration, parameter assignment, commissioning, diagnostics and maintenance of intelligent field devices and automation components. The tool is well known and may use in PROFIBUS).

Per claim 10

The rejection of claim 8 is incorporated and PROFIBUS further discloses

- comprising the step of: using the second compiler to produce graphical user interfaces in XML language from the EDD 1.1 device descriptions (on page 31 "*The component*



*editor interface generates the component description in the form of an XML file whose configuration and contents are defined in the PROFINet specification.”)*

### ***Response to Arguments***

Applicant's arguments filed on Sept. 9, 2010 have been fully considered but they are not persuasive.

- In the remarks, Applicant argues that:

Examiner cited the references Diedrich and Pöschmann do not cure the deficiency in the claim 5. They do not add to the teaching of PROFIBUS.

#### **Examiner's response:**

Examiner disagrees.

PROFIBUS is a standard for field bus communication in automation technology disclosed in the reference Profibus. Those references examiner cited in the office action are to cure the deficiency.

First, Diedrich discloses field device integration for engineering process in DCS system using PROFIBUS model. Further, Diedrich teaches device description has to be generated by compilers or generators recited in claim 5.

Second, Pöschmann discloses an experience use a formal description technique in the environment of fieldbus system implementing with PROFIBUS. Also, Pöschmann discloses syntactic and semantic errors can be detected by using tool and corrected by using compiler.

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In the view of foregoing, Profibus, Diedrich and Pöschmann do disclose or suggest, individually or in combination, each of limitations recited in claim 5.

As the cited references teach or suggest each limitation recited in the application claims, the 35 USC § 103(a) rejection of claims 5-10 is maintained.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUNCHUN WU whose telephone number is (571)270-1250. The examiner can normally be reached on 8:00-16:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191